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Dear Rotary Leaders!

This newsletter is dedicated to updates on Polio Eradication and is made by our EPNZC Lena Mjerskaug

The world is making a historic move that could finally wipe out polio - this could be the year that we eliminate the disease

In just two weeks in April and May, the entire world is going to do something remarkable: 155 countries are going to switch from one kind of polio vaccine to another. They'll change out the trivalent version of the vaccine — one that protects against all three types of the polio virus — to the bivalent version that protects against two. Ever since 1999 the wild form of type 2 of the virus was eliminated, but the live, oral vaccine can sometimes mutate and reinfect people. Eliminating this type from the vaccine will keep that from happening so that when polio is wiped out, there's no chance it will make a comeback.

The Global Polio Eradication Initiative (GPEI) calls the two-week event "one of the most ambitious globally synchronized projects in the history of vaccines." Although it will be a huge logistical operation, polio experts hope to finish the switch within two weeks. The developing world, including many populous countries like India, China and Indonesia, uses up to 1.8 billion doses of oral polio vaccine each year. By May 1, the GPEI hopes, hundreds of millions of new vaccine doses will be moved to refrigerated warehouses all over those countries, while millions of old doses are gathered and destroyed.

This effort is one of many ambitious steps the world had taken to erase the disease from the planet. And in just a year or two, that dream could become a reality.

On the verge of elimination

The progress to combat polio is incredible, since as recently as 1988, 350 000 people had the debilitating disease, the majority of whom were children. In 2015, there were only 96 cases of polio in the whole world, and the disease could be entirely gone within the next few years. With just 10 cases of the virus so far this year (as of April 15.) – 8 in Pakistan and 2 in Afghanistan – the World Health Organization (WHO) is confident the battle against polio is nearly won.

(Up to this point, we've only ever completely eradicated one human disease: smallpox. The last case occurred in 1977. Guinea worm will likely be eradicated soon as well, since it only had 22 cases in 2015.)

The GPEI, a partnership the WHO, the CDC, UNICEF, and Rotary International, sums up the coordinated global effort behind behind this remarkable decline: In

1988, when the GPEI began, polio paralyzed more than 1000 children worldwide every day. Since then, more than 2.5 billion children has been immunized against polio thanks to the cooperation of more than 200 countries and 20 million volunteers, backed by an international investment of more than US\$11 billion.

The WHO estimates that 1.5 million children's lives has been saved and 13 million people are able to walk today because of the public health push to eradicate polio.

Not gone yet

Polio is highly infectious. It's spread through human contact, usually through infected stool - a particularly dangerous route of transmission among children who are not yet potty-trained, as well as in areas with poor sanitation systems. People can also catch it by coming into contact with contaminated food or water.

Afghanistan and Pakistan are the only two countries where polio is still spreading naturally. They were responsible for all 70 wild cases last year. The other 26 cases in 2015 were due to the very rare occurrence of the oral vaccine mutating and causing the virus, which is called "vaccine-derived poliovirus", according to the Global Polio Eradication Initiative.

When someone is immunized, they excrete some of the weakened virus that is used in the oral vaccine. In areas of poor sanitation, that weakened version of the virus can then spread further, providing what the WHO calls "passive immunization." But in severely under-immunized populations, that weakened virus can circulate for a year or more, giving it time to mutate and strengthen into a virus that can actually cause paralysis.

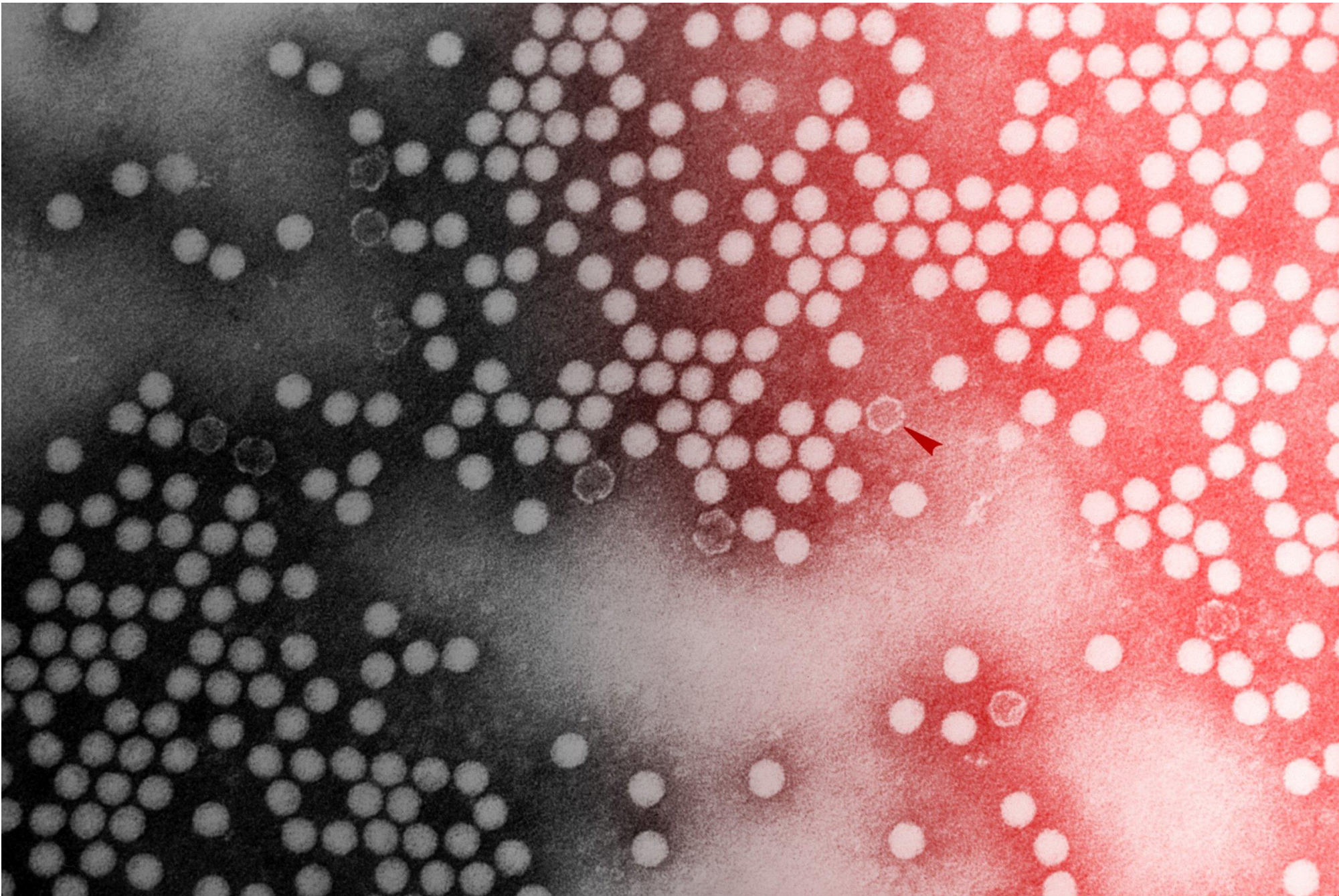
These cases are exceedingly rare; there were billions of doses of the oral polio vaccine distributed between 2000 and 2015 and fewer than 760 cases of vaccine-derived poliovirus. "The small risk ... pales in significance to the tremendous public health benefits associated with" the vaccine, WHO writes.

Up to this point, we've relied on the oral vaccine because it's more effective at preventing the spread of polio from person-to-person, it's easier to administer, and it costs only 15 cents per dose (compared to \$1 for the injected vaccine).

But once no more wild cases are reported, health agencies around the world are going to switch over to the other kind of vaccine, which is injected and contains an inactivated form of the virus that can't mutate back to an infectious state.

What's next

Even after no more polio cases of any kind are reported, health officials will have to keep vaccinating children and monitoring the world to make sure the disease stays gone. It took three years after the last case of smallpox before the WHO declared that disease eradicated in 1980.



CDC/Joseph Esposito Polio virus

Peter Crowley, head of UNICEF's global efforts against polio, even told NPR in 2015 that the agency is "aiming to halt all transmission of wild polio virus next year."

That means there's a chance that this year could be the last that any child in the world gets polio, something that would be a major medical and humanitarian achievement.

And our success with polio, Orenstein said in an audio interview published alongside his NEJM paper, could lead to the eradication of other diseases.

"To accomplish [eradication], humanity has to unite against a common enemy — in this case the polio viruses. And this hopefully will be what will be achieved in the near future," he said. "And then we can move on to other things that currently afflict the populations around the world."

Kind regards

Ingrid

